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Expression of the functional soluble form of human fas ligand in activated lymphocytes

M Tanaka, T Suda, T Takahashi and S Nagata
Osaka Bioscience Institute, Japan.

Fas is a type I membrane protein which mediates apoptosis. Fas ligand (FasL) is a 40 kDa type II membrane protein expressed in cytotoxic T cells upon activation that belongs to the tumor necrosis factor (TNF) family. Here, we found abundant cytotoxic activity against Fas- expressing cells in the supernatant of COS cells transfected with human FasL cDNA but not with murine FasL cDNA. Using a specific polyclonal antibody against a peptide in the extracellular region of human FasL, a protein of 26 kDa was detected in the supernatant of the COS cells. The signal sequence of granulocyte colony-stimulating factor was attached to the extracellular region of human FasL. COS cells transfected with the cDNA coding for the chimeric protein efficiently secreted the active soluble form of human FasL (sFasL). Chemical crosslinking and gel filtration analysis suggested that human sFasL exists as a trimer. Human peripheral T cells activated with phorbol myristic acetate and ionomycin also produced functional sFasL, suggesting that human sFasL works as a pathological agent in systemic tissue injury.

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